THE CHARACTERISTICS OF MASCULINITY, FEMININITY, ANDROGYNY, AGE, AND ACADEMIC ABILITY AS FACTORS IN THE RETENTION OF WOMEN STUDENTS IN COLLEGE PROGRAMS IN BUSINESS ADMINISTRATION

BY

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The purpose of this study was to analyze the effects of age, academic ability, masculinity, femininity, and androgyny on the retention of women students in a program of business administration. One hundred and fifty-nine students enrolled at the University of Central Florida during the spring quarter of 1979 were included in the study. There were four groups; the two major groups were Group I, women students enrolled in the College of Business Administration, and Group II, women students who had transferred out of the College of Business Administration. Group III, women education majors, and Group IV, men business administration majors, were used as comparison groups to see if their masculine, feminine and androgyny scores on the Bem Sex-Role Inventory would differ greatly from those in Groups I and II.

The Bem Sex-Role Inventory was used to measure students' masculine, feminine, and androgyny scores. A demographic profile data sheet and university records were used to gather additional data. All data for the four groups were compared through cross tabulation, and data on subjects in Group I and II were analyzed and classified through a discriminant analysis.

A discriminant function composed of nine discriminating variables at the .05 level of significance resulted from the analysis. The variables are, in the order of their importance, (1) student classification, (2) marital status, (3) feminine standard score, (4) Scholastic Aptitude Test score, (5) difference standard score, (6) employment status, (7) age, (8) grade point average, and (9) masculine standard score.

The major conclusion was that given data on the nine variables listed above for a new woman student who has selected business administration as a major, a prediction concerning her staying in the business administration curriculum can be made with a 69.7 percent accuracy rate, and a prediction of her transferring out of business administration can be made with a 62.5 percent chance of accuracy.

CHAPTER 1
INTRODUCTION

The governing clause of Title IX of the 1972 Education Amendments to the Civil Rights Act of 1964 sets the stage for eliminating sex discrimination. The law, which was originally introduced in 1971 as an amendment to the Civil Rights Act of 1964, presents its purpose in its opening statement as follows:

> No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance. . . (Taylor and Schavlik, 1975, p. 5.)

No one can be excluded from participating in any academic, occupational training, or other educational program within institutions using Federal funds. "The practices that are specifically prohibited by Title IX as well as other practices that maintain stereotypic sex roles should be examined" (Taylor and Schavlik, 1975, p. 15). Further, "Any special services that are provided to help students overcome the effects of previous sex-role socialization should be described and evaluated by those responsible for them" (Taylor and Schavlik, 1975, p. 28). Examples are counselling services offered by professional counselors, clinical and consulting psychologists, psychiatrists, academic counselors or advisers, residence hall counselors, and admissions counselors.

"All who assist students in making educational and career choices are likely to influence, consciously or unconsciously, the decisions of some students" (Taylor and Schavlik, 1975, p. 27).

Without a doubt, the thrust of Title IX should provide an incentive and push institutions of higher education in that direction of eliminating inequality which is based on sex-role stereotyping. What took the American society so long to recognize the stunting effects sex stereotyping has had on women? According to Kate Mueller, women had to wait until the 1970's for the women's liberation movement to awaken the public to women's problems and needs. This wait for women to begin to ask for equal rights, in Mueller's opinion, can be traced to several factors.

1. In the 1950's many of the women indicated they were not too unhappy with their own situations.
2. A women's movement would mean full utilization of birth control, including the birth control pill, so that maternal responsibilities could be carefully planned. It took awhile for the birth control pill to be accepted.
3. It wasn't until the later 1960's that women's groups learned how to organize, and how to apply verbal protests.
4. New ways of looking at love and new attitudes and behavior about sex relations have slowly developed during the last forty years. Along with these new attitudes and behaviors came planned parenthood and lower birthrates.

5. As late as the 1950's and 1960's, women were still suffering under Freud's description of women as being inferior.
6. During the 1950's and 1960's there was the "utter perfidy" of the mass media toward homemakers.
7. Passage of the Equal Rights Amendment, which was written and introduced in Congress in the early 1920's, was not strongly supported by any of the organized women's groups until the late 1960's and early 1970's (Mueller, 1977, pp. 43-45).

The focus of this study is to determine if the characteristics of masculinity, femininity, androgyny, age and academic ability of women students are significant influences on the retention of women students in business administration programs at the post secondary level. Is there a correlation between these factors and the retention of women students in business administration, which is considered to be a stereotypically nontraditional field of study for women?

A stereotype is defined as an "unvarying form or pattern, having no individuality, as though cast from a mold" (Webster, 1971, p. 860). When stereotype is applied to sex roles, the definition would indicate all women are alike in certain respects, just as all men are alike and they both possess a certain degree of fixed or conventional expressions, notions, character and mental patterns.

The roots of sex-role stereotyping are deep in our culture. Cross points out how effectively de Tocqueville briefly and concisely described male/female stereotypes of nearly 150 years ago.

> In no country has such constant care been taken as in America to trace two clearly distinct lines of action for the two sexes and to make them keep pace one with the other, but in two pathways that are always different. Women took no part in business or in politics; they never managed the outward concerns of the family. With rare exceptions they were confined to the quiet circle of domestic employment. (Cross, 1965, p. vii)

Cross offered a possible explanation of sex roles when she said,

> Americans had simply applied to the sexes the great principle of political economy which governs the manufacturers of our age by carefully dividing the duties of man from those of women in order that the great work of society may be better carried on. (Cross, 1965, p. viii)

Some improvements have been made in the betterment of women's role in society since 1835; however, in the evolution and maturation of the individual, sex-role stereotyping continues to be reinforced. For example, studies cited by Tibbets (1976) show problems connected with sex-role stereotyping:

> Stereotypically masculine traits, such as independence, dominance, competition, achievement, drive, leadership, decisiveness and logic are considered more socially desirable than are stereotypically feminine attributes, such as dependence, emotionalism, submissiveness, passivity, indecisiveness, and lack of logic . . . both men and women agree that for an adult, regardless of sex, stereotyped male characteristics were "healthier" than were stereotyped female characteristics. (Tibbets, 1976, p. 179)

The control that sex-role stereotyping injects into the work environment and its effects on the degree of success of women in

work was investigated by the National Commission on the Observance of International Women's Year in 1976. The Commission specifically addressed four areas. "The Commission examined women entering the skilled crafts and blue collar jobs; secretaries; women who own their own businesses; and new ways in which pay rates are being evaluated" (National Commission on the Observance of International Women's Year, 1976, p. 58). The Commission undertook the following:

> They looked into practices in the construction industry to determine how nondiscrimination laws are applied. Construction work has been a white male preserve for so long that a "macho" folklore has grown up around it. But modern technology has made nearly all construction jobs easier and has brought many of them within the capability of many women. (National Commission on the Observance of International Women's Year, 1976, p. 58)

The Commission further investigated problems that women who want to go into business on their own encounter. The investigation revealed enormous problems for these women. Arthur S. Flemming, Chairman of the U. S. Commission on Civil Rights, referred to these problems as "staggering." In a 1975 report he wrote:

> Our investigations reveal that minority and female-owned firms encounter problems of staggering proportions in obtaining information on federal, state and local government contracting opportunities in time to submit bids, and in obtaining working capital necessary for effective marketing and bidding. . . .
> . . . Minority and female entrepreneurs also encounter a great deal of skepticism regarding their ability to perform adequately on government contracts. (Flemming, 1975, p. 1)

More and more women are entering the labor force. According to the National Commission on the Observance of International Women's Year (1976), there is a need for opportunities for women to enter nontraditional fields of work . . . that is, those fields which have

traditionally been open to males only. The steady increase in the number of women entering the labor force is reflected in the percentage increase during the last four years. Women represented 40.5 percent of the civilian labor force in 1976. This percentage increased to 41.7 percent in 1978, and was up to 41.9 percent through May, 1979. (U. S. Bureau of the Census, 1979, p. 392).

Within the one million divorces which occurred in 1975, only 14 percent of the women involved were awarded alimony. Generally, child support payments are less than half enough to support the children. It is apparent that more women needed to work in 1979 than did in 1976. Limited availability of employment for women, because of their being confined to the few "traditional" fields of work for women such as teaching, nursing and secretarial work, has been exacerbated by sex-role stereotyping in all phases of American life (National Commission on the Observance of International Women's Year, 1976, p. 57).

Students of all ages are not shielded from the effects of sex-role stereotyping. In fact they are often overtly subjected to such stereotyping all through school and during their formative stages in life. Ms. Verheyden-Hilliard painted the following picture at recess time on the playing fields at an elementary school.

"John says:	'Get away, we don't want any girls playing.'
Mary says:	'They won't let me play with them.'
Educator says:	'Well . . . that's the way boys are. They are too rough, anyway. Play with the girls." (Verheyden-Hilliard, 1975, p. 151)

> If boys are supported and indeed encouraged in this behavior for all of their formative years (boys will be boys), there is no way to expect them to suddenly turn about as adults and see female peers as equals. Women have remained, and will remain, the little girls that society allowed and encouraged little boys to shove aside so that they could play with the boys without interference . . . and they're still doing it when they're 45. (Verheyden-Hilliard, 1975, p. 151)

According to Ms. Verheyden-Hilliard, "The message conveyed to girls is that boys have a right to exclude them and that they are too weak to compete anyway. The girls retreat to the girls games and the female careers where they have been forcefully told they belong" (Verheyden-Hilliard, 1975, p. 152).

Girls and women apparently lack strong success models to follow. Universities are more lacking in such role models than are elementary schools. The closer to the top of the academic ladder, the greater the preponderance of males. Statistics for secondary schools show this trend.

> . . . in the eleven-year periods between 1950-51 and 1960-61 the number of women serving as junior high and senior high school principals dropped from 18% to 3.8% for all secondary schools . . . for the same eleven year periods the percentages of women elementary principals decreased by nearly 20%. (Van Meir, 1975, p. 163)

More recent statistics cited by the National Center for Education Statistics revealed the State of Florida as having 23 percent women in principal and assistant principalships (National Center for Education Statistics, 1978, p. 19).

It is recognized that women who enter institutions of higher education today are more likely to choose careers traditionally dominated by men than were women ten years ago. However, differences in choice of career between men and women have not been

substantially reduced. The percentage of women who entered the fields of physical sciences, biological sciences, business, and engineering increased at the same rate as that of men from 1961 to 1971. The percentage of women choosing these professions increased from 21 percent to 26 percent. The percentage of men choosing these professions increased from 56 to 61 during the same period of time (Peng and Jaffee, 1979, p. 286). The career fields generally selected by women continue to be those traditionally dominated by women, such as education and nursing.

Why does the problem of sex differences in such areas as career choice persist? There is general agreement among writers and educators that women continue to limit their own choices and substantially contribute to their own second-rate status in society. According to Sylvia-Lee Tibbets,

> Women choose to be inferior--not because they are, nor necessarily because they want to be--but because: (a) they have been taught to believe they are or should be inferior; (b) they are afraid to appear unfeminine; or (c) they are not fully aware of their situation and do not realize that they are being treated as second class citizens or that they do have a legitimate complaint. (Tibbetts, 1975, p. 178)

Rather than holding women entirely responsible for their position in society, it would be more accurate to describe women as "victims" of a society steeped in sex-role stereotyping. When individuals do not realize that a situation exists, there is nothing they can do to improve it; however, once a woman becomes aware of the sexist nature of our society, she becomes responsible for the improvement of her own position in society. For example, her recognition of the possibility for people, and especially for her, to be both masculine and feminine

would enable her to express anger, assert her preferences, trust her own judgment, and take control of her life situations, whatever they might be. According to Dr. Sandra Bem,

> For fully effective and healthy human functioning, both masculinity and femininity must each be tempered by the other, and the two must be integrated into a more balanced, a more fully human, a truly androgynous personality. An androgynous personality would thus represent the very best of what masculinity and femininity have each come to represent, and the more negative exaggerations of masculinity and femininity would tend to be cancelled out. (Bem, 1975, p. 4)

Need for the Study

If sex-role stereotyping is detrimental to the successful completion of academic programs and the attainment of educational goals established by women students, an awareness of the problem by educators is the first step in helping to eliminate the problem. Today's women need to be made aware of the expanding choices of academic programs and job opportunities available to them. A major responsibility of the educator is to assist students in their efforts to expand their professional horizons, exercise their full potential in their chosen fields of study and to take advantage of their freedom to make choices without being hindered by the detrimental effects of sex-role stereotyping by the individual and society.

It is important for educators and society at large to challenge the myths that have kept women in their "place." Daughters, as well as sons, have to believe that they can achieve their dreams and perform to the level of their abilities; consequently, "We must encourage

the growing recognition by women and men that equal rights is a matter of simple justice" (National Commission on the Observance of International Women's Year, 1976, p. v).

Women students who chose business as their profession, which is still a nontraditional field of study for women today, should be free to strive for top level positions within the profession. Women students should be freed from the direct and subtle effects of sex-role stereotyping in their efforts to complete their academic programs in such nontraditional fields of study as business administration.

Statement of the Problem

It was the purpose of this study to determine whether the characteristics of masculinity, femininity, androgyny, age, and academic ability are factors which correlate with the retention of women students in programs of study in the College of Business Administration at the University of Central Florida.

Definition of Terms

The following definitions apply to the terms as they are used in this study.

Stereotype: An unvarying form or pattern, having no individuality, as though cast from a mold.

Sex-role stereotypes: Socially designated behaviors that differentiate between men and women; women commonly possess a common pattern of conventional expression, notion, character, or mental attitude, just as men do, but the attitudes and patterns differ greatly.

Bem Sex-Role Inventory: An inventory consisting of sixty personality characteristics, twenty of which are judged to be socially desirable traits for men, twenty of which are judged to be socially desirable traits for women and twenty characteristics which serve as filler items.

Masculine characteristics: A set of characteristics on the Bem Sex-Role Inventory judged to be more desirable in American society for a man than for a woman.

Feminine characteristics: A set of characteristics on the Bem Sex-Role Inventory judged to be more desirable in American society for a woman than for a man.

Androgyny: A score on the Bem Sex-Role Inventory which indicates that the individual is not strongly self-identified with either masculine or feminine characteristics.

Group I: Those women students enrolled in the College of Business Administration at the University of Central Florida during the Spring Quarter, 1980, who have completed ninety (90) quarter hours of college study including at least two (2) courses in business administration.

Group II: Those women students enrolled at the University of Central Florida during the Spring Quarter, 1980, who have taken at least two (2) courses in business administration, and who have transferred out of the College of Business Administration at some point between January, 1979, and June, 1980.

Age: The actual age of women students in Groups I and II as stated on their demographic data sheets.

Academic Ability: Scores on the Scholastic Apptitude Test, American College Test or the Florida Twelfth Grade Test which have been converted to a common score utilizing the 1977 State University System of Florida Equivalency Document.

Delimitations

All of the subjects in this study were enrolled in the College of Business Administration at the University of Central Florida between January, 1979, and June, 1980.

There was no attempt to make inferences about the entire female student population in the State University System of Florida or the entire student population at the University of Central Florida. Inferences were confined to the stated population included in the study.

Description of the Instruments

The Bem Sex-Role Inventory is described by Dr. Sandra Lipsitz Bem as follows:

> Both in psychology and in society at large, femininity and masculinity have long been conceptualized as opposite ends of a single bipolar dimension. More recently, however, scholars in a number of disciplines have begun to concern themselves with the concept of psychological androgyny, a term that denotes the integration of femininity and masculinity within a single individual. The concept of psychological androgyny implies that it is possible for an individual to be both compassionate and assertive, both expressive and instrumental, both feminine and masculine, depending upon the situational appropriateness of these various modalities; and it further implies that an individual may even blend these complimentary modalities in a single act, being able, for example, to fire an employee if the circumstances warrant it but with sensitivity for the human emotion that such an act inevitably produces.

Before empirical research on the concept of psychological androgyny could be initiated, however, it was necessary to develop a new type of sex-role inventory, one that would not automatically build in an inverse relationship between femininity and masculinity as previous inventories had done. On most inventories, items are empirically defined as feminine or masculine on the basis of differential endorsement by females and males, and a person filling out the inventory is said to be either feminine or masculine as a function of which sex she or he most closely resembles. Although it is possible for a person to earn a score that falls halfway between the two extremes and thereby reveal that she or he does not closely resemble either sex, a person cannot make the strong statement on such an inventory that she or he is androgynous.

The Bem Sex-Role Inventory (BSRI) was designed to implement empirical research on psychological androgyny. It contains 60 personality characteristics, 20 of which are stereotypically feminine (e.g., affectionate, gentle, understanding, sensitive to the needs of others), and 20 of which are stereotypically masculine (e.g., ambitious, self-reliant, independent, assertive). The BSRI also contains 20 characteristics that serve as filler items (e.g., truthful, happy, conceited). When taking the BSRI, a person is asked to indicate on a 7-point scale how well each of the 60 characteristics describes herself or himself. The scale ranges from 1 ("Never or almost never true") to 7 ("Always or almost always true") and is labeled at each point.

The BSRI has two features distinguishing it from most masculinity-femininity scales. The BSRI treats femininity and masculinity as two independent dimensions rather than as two ends of a single dimension, thereby enabling a person to indicate whether she or he is high on both dimensions ("androgynous"), low on both dimensions ("undifferentiated") or, high on one dimension but low on the other (either "feminine" or "masculine").

In addition, the BSRI is based on a conception of the traditionally sex-typed person as someone who is highly attuned to cultural definitions of self-appropriate behavior and who uses such definitions as the ideal standard against which her or his own behavior is to be evaluated. In this view, the traditionally sex-typed person is motivated to keep her or his behavior consistent with an idealized image of femininity or masculinity, a goal she or he presumably accomplishes both by selecting behaviors and attributes that enhance the image and by avoiding behaviors and attributes that violate the image. Accordingly, items

> were selected as feminine or masculine on the basis of cultural definitions of sex-typed social desirability and not on the basis of differential endorsement by females and males, i.e., a characteristic qualified as feminine if it was judged to be traditionally more desirable in American society for a woman than for a man, and it qualified as masculine if it was judged to be more desirable in American society for a man than for a woman.
>
> The BSRI is essentially self-administering and may be given to large groups as well as to individuals. It has also been administered by mail in several studies. The inventory consists of 60 adjectives and phrases printed on a single sheet with instructions and space for personal information about the subject on the reverse side. (Bem, 1979, pp. 1-3)

The Bem Sex-Role Inventory initially was administered to 444 male and 279 female students in introductory psychology at Stanford University during the Winter and Spring of 1973. It was also administered to an additional 117 male and 77 female students at Foothill Junior College. The data that these students provided represent the normative data for the Bem Sex-Role Inventory.

Subjects were classified as sex typed, whether masculine or femininine, if the androgyny t ratio reached statistical significance ($|t| \geq 2.025$, $df = 38$, $p < .05$), and they are classified as androgynous if the absolute value of the t ratio is less than or equal to one (Bem, 1974, p. 161).

Dr. Bem estimated the internal consistency of the Bem Sex-Role Inventory by computing the coefficient alpha separately for the masculinity, femininity, and social desirability scores of the subjects in each of the two normative samples. The results indicated all three scores to be highly reliable, both in the Stanford sample "masculinity $a = .86$; femininity $a = .80$; social desirability $a = .70$" (Bem, 1974, p. 159).

> Because the reliability of the Androgyny t ratio could not be calculated directly, coefficient alpha was computed for the highly correlated Androgyny difference score, femininity - masculinity, using the formula provided by Nunnally (1967) for linear combinations. The reliability of the androgyny difference score was .85 for the Stanford sample and .86 for the Foothill sample. (Bem, 1974, p. 159)

In an effort to determine test-retest reliability, the Bem Sex-Role Inventory was administered for a second time to 28 males and 28 females from the Stanford normative sample. The second administration of the inventory took place approximately four weeks after the first administration.

> During this second administration, subjects were told that we were interested in how their responses on the test might vary over time, and they were explicitly instructed not to try to remember how they had responded previously. Product-moment correlations were computed between the first and second administrations for the Masculinity, Femininity, Androgyny, and Social Desirability scores. All four scores proved to be highly reliable over the four-week interval (Masculinity r = 90; Femininity r = .90; Androgyny r = 93; Social Desirability r = .89). (Bem, 1974, p. 160)

Demographic Profile

The demographic profile data sheet was designed to elicit pertinent background information from the subjects. Most of the information requested on the demographic profile data sheet also was collected by the investigator from the student's permanent file and University data tapes. Collecting the same information from two sources was intended to provide a cross check on the data.

The following information was available only from the demographic profile data sheet: Address for Summer Quarter; marital status, employment outside the home; occupation; and number of children.

The final question, "If you were enrolled in the College of Business Administration after January 1, 1979, and subsequently have transferred to another college at U.C.F., please indicate in the space provided below your reasons for the transfer," provided the investigator the opportunity to analyze the various reasons for the transfer.

Statement of Hypotheses

The major hypothesis of this study was that an individual's membership in either Group I or Group II can be predicted on the basis of age, academic ability, and the Bem Sex-Role Inventory characteristics. The following sub-hypotheses in the null form were tested.

1. The masculinity score derived from the Bem Sex-Role Inventory is a variable which does not discriminate when used in the prediction of group membership in either Groups I or II.
2. The femininity score derived from the Bem Sex-Role Inventory is a variable which does not discriminate when used in the prediction of group membership in either Groups I or II.
3. The androgyny score derived from the Bem Sex-Role Inventory is a variable which does not discriminate when used in the prediction of group membership in either Groups I or II.
4. The age of the individual is a variable which does not discriminate when used in the prediction of group membership in either Groups I or II.
5. The individual's academic ability is a variable which does not discriminate when used in the prediction of group membership in either Groups I or II.

CHAPTER II
REVIEW OF THE RESEARCH

The purpose of this review was to study sex-role stereotyping as it related to women in business and education. Research reviewed concerned the questions, what is sex-role stereotyping, how has it evolved, does it exist today, and if so, how does it affect student performance.

Conflicts from Sex-Role Stereotyping

The conflicts which result from some sex-role stereotyping have been studied by many researchers. One of the most noted studies is Matina Horner's "Toward an Understanding of Achievement Related Conflicts in Women" (Horner, 1972). Horner tested freshman and sophomore students, male and female, at a large mid-western university. These students responded to a cue added to the end of the Standard Thematic Apperceptive Test (TAT). The cue is "After first term finals, Anne finds herself at the top of the medical school class." Horner concluded that approximately "65% of the girls were disconcerted, troubled, or confused by the cue" (Horner, 1972, p. 162). She further concluded that a fear of success imagery dominates responses from women students and is relatively absent in male responses, and that conflicts emerge between role expectations and aspirations due to

previously imposed stereotypes (Horner, 1972, p. 162). The expectancy that success in achievement related situations will be followed by negative consequences arouses fear of success in otherwise achievement oriented women which then inhibits their performance and levels of aspiration.

In an earlier study, Horner hypothesized that the motive to avoid success is significantly greater in women than it is in men (Horner, 1969). She further hypothesized that this tendency is even greater in high achievement oriented, high ability women who are capable of success than it is in women at the other extreme; that is, lower achievement oriented or lower ability women who cannot and will not seek to achieve. Horner's research was based on 178 students who were administered the Standard Thematic Apperceptive Test. Her findings suggest that most women will exercise their full potential only in a non-competitive situation, especially if they are competing with men. This tendency is stronger among women with an intense anxiety about success. One of the most significant findings of this research is the complexity of achievement motivation in women. Her results indicated that fear of success was found to be aroused in situations in which there was concern over or anxiety about competitiveness and its aggressive overtones. When these anxieties occurred, women experienced conflict and adjusted their behaviors to their internalized sex-role stereotypes.

The effects of the various traditional roles performed by women, such as wife and mother, have been studied. One researcher examined

the question of whether women who have experienced these traditional roles experienced less conflict about achievement (Tomlison-Keasey, 1974). Subjects in the Tomlison-Keasey study were women students from Douglass College and University College at Rutgers University whose enrolled women students differed in terms of age, marital status and number of children. A young unmarried sample was drawn from Douglass College and an older married sample was drawn from the University College. The procedure followed Horner's study by using a cue response, and the results indicated a significantly different level of fear of success. In the study it was hypothesized that women who were performing as mothers and wives, which were perceived as appropriate achievements, experienced less fear of success and reduced anxiety than did those women who were not performing these "appropriate" roles. The results were as follows:

> . . . women who had satisfied the mother and the wife roles are not as likely to evidence fear of success. . . unmarried subjects had significantly more fear of success . . . than did married subjects . . . and women with no children had significantly more fear of success . . . than did women with children. (Tomlinson-Keasey, 1974, p. 235)

Evolution of Sex Roles

The changing of sex roles has been slow moving. Myth and fact are intertwined. Some very significant "ole wives tales," however, are laid to rest (Tangri, 1972). For example, data indicate that women who seek to enter predominantly male-dominated professions do not show evidence of having identified with their fathers over their mothers. Daughters who have more educated working mothers in male-dominated occupations will view their mothers as role models. Tangri

also found that women in nontraditional fields or occupations do not reject the traditional female roles of wife and mother. They do plan, however, to postpone marriage and have fewer children than do the more traditional women. Also they do not view themselves as masculine women (Tangri, 1972, p. 196).

Studies reveal findings that vividly point out the existence in our contemporary society of "clearly defined sex-role stereotypes for men and women contrary to the phenomenon of unisex roles currently touted in the media" (Broverman, 1972, p. 75). In his examination of the relationship between mothers' employment status and sex-role perceptions of college students, daughters of employed mothers perceived fewer differences between men and women than did daughters of homemaker mothers. Also, "since more feminine traits are negatively valued than are masculine traits, women tend to have more negative self-concepts than do men" (Broverman, 1972, p. 750). The double standard emerges. According to Broverman:

> If women adopt the behaviors specified as desirable for adults, they risk censure for their failure to be appropriately feminine, but if they adopt the behaviors that are designated as feminine, they are necessarily deficient with respect to the general standards of adult behavior. (Broverman, 1972, p. 75)

Sex Roles of Women in Business

Few significant studies in the area of women in business have been found. There is an abundance of opinion and testimony, however, on the topic. For example, an article appeared in Business Week Magazine which stressed the barriers are still up for women at the

top executive levels. There was noted, however, a new trend for women graduates who are getting job offers that were closed to those women who graduated just a few years before them. In the opinion of Ms. Grimm, the first woman vice-president of Carson, Price, Scott and Co., "A woman who is determined to play in a game so fixed, had better be prepared to look like a girl, act like a lady, think like a man and work like a dog" (For Women, a Difficult Climb to the Top, 1969, p. 45).

Fretz and Hayman conducted a survey with twenty business organizations, ten of which are industrial companies from among the first 100 companies on the Fortune "500" list. The organizations that participated in the survey employed nearly two million people. The sample organizations included women at all levels of employment. Thirty six percent of the persons employed in the twenty business organizations that participated in the survey were women. However, a women at the managerial and professional levels accounted for less than 1 percent of the total number of employees. Fretz and Hayman concluded from their survey that women are hindred by their own preconceived ideas of what their roles in business should be (Fretz and Hayman, 1973, p. 134).

One of only a few available studies with data regarding women in the work force as early as 1920 is presented by Elizabeth Waldman. Most of the data are from the Current Population Survey conducted by the Bureau of the Census for the Bureau of Labor Statistics. They relate to the population 16 years of age and over. The typical working woman in 1920 was single, about 28 years of age and from the

working class. The typical working woman of today is married and half of them are over 39 years of age. Chances are that the working women of today are supplementing the family income (Waldman, 1970, pp. 10-18).

In an attempt to eliminate the myths about women managers, research has been conducted to provide insight into the similarities and dissimilarities of men and women managers. As opposed to a predominantly psychological approach to women's attitudes, values, and beliefs and how these factors cause them to behave in a business situation, Reif and Newstrom utilized an approach based on women managers' perceptions of their work environment. The purpose was to determine if their views of the formal and informal aspects of organizations are different from the views of men. If this was true, a possible conclusion would be that women should be treated differently from men. The methodology centered on the semantic differential technique, which measures perceptions along two independent dimensions, evaluative and potency. A questionnaire was administered to 286 men and 55 women in management development programs in business and government organizations. It was concluded that women and men managers are more similar than dissimilar in their feelings about their work climate. Based on this, Reif and Newstrom concluded "that decisions made about women on the basis of their sex, without considering such individual factors as background, education, experience, personality and potential, are likely to be wrong" (Reif and Newstrom, 1975, p. 78).

Recent studies have yielded contradictory results concerning male and female attitudes and behavior as they work in organizations.

Some studies found persons following traditional sex-role stereotypes; in others, they have not. Powell and Butterfield explored the possibility that sex-role identification is a more important variable than is gender in an individual's perceptions of traits desirable for management personnel. One hundred and ten graduate students with jobs in the business community and 575 undergraduate business students participated in the study conducted by Powell and Butterfield. The students completed the Bem Sex-Role Inventory for both themselves and for a person whom they believed to be a "good manager."

> As expected, individuals' sex-role identifications significantly affected their perceptions of traits desirable for management personnel, while sex had virtually no effect. The study concludes that sex-role identification is a variable deserving of further attention, particularly when sex-related differences are examined. Also, a graduate woman revealed more masculine traits than feminine in their self-descriptions, suggesting that a masculine standard for management may nullify the femininity of women in or aspiring to management positions. (Powell and Butterfield, 1978, p. 1)

Virginia Schein cited that limited attention has been paid to the impact of sex-role stereotypical thinking on the perceived and actual performance of women in management. Her investigation of prior research in the areas of sex-role stereotypes and performance perceptions revealed an over-riding theme that sex role stereotyping has a definite and negative impact on the selection of women into managerial positions. She further stressed the need for research on the relationship between power and political behavior and effective managerial performance.

> Limited opportunities to acquire work-related power acquisition behaviors and exclusion from political/ influence networks within organizations can, then, limit the performance effectiveness of the women with the potential to do well, as well as, in the long run diminish her motivation to perform. As such, a prime research target should be the role of power acquisition behaviors in effective managerial functioning and the effect of sex and sex-role stereotypical thinking on acquisition of and opportunity to use these behaviors. (Schein, 1978, p. 266)

Jeanne Herman and Karen Gyllstrom discovered through their recent study of 500 employees stratified by sex and job classification in a major midwestern university that myths are dispelled concerning inter-role conflict for women employed full-time. "A potential employer could not justify hiring a male over an equally competent female on the grounds that the woman will experience greater interrole conflict." The results show that married women with children who work full time report no more conflict between job and family responsibilities than do men who hold a comparable number of social roles (Herman and Gyllstrom, 1978, p. 330).

Sex Roles of Women in Education

Taylor concluded in her doctoral dissertation that, all things being equal, superintendents of schools are not likely to hire women as school administrators. The researcher concluded that the only factor having any real and constant significance of who will be hired and who will not be hired is the sex of the applicant (Taylor, 1973, p. 128).

The percentage of women elementary school administrators during the past forty years has steadily declined. Information on the high school administrative level showed the same trend. Data provided by the National Council of Administrative Women in Education indicated the following:

> . . . in the eleven-year periods between 1950-51 and 1960-61, the number of women serving as junior high and senior high school principals dropped from 18% to 3.8% for all secondary schools. (Van Meir, 1975, p. 163)

More recent statistics cited by the National Center for Education Statistics revealed that in the State of Florida in 1977, 23 percent of public school principals and assistant principals were women (National Center for Education Statistics, 1978, p. 19).

Young (1976) researched popular myths in public education concerning women in the field of educational leadership at the elementary and secondary level. For each myth cited, contrary evidence evolved from the study. Several of the most quoted myths that were disproved are (1) women rarely possess the credentials for administrative positions, (2) women seldom aspire or apply for administrative positions, (3) women will not make the required commitment to an administrative position, and (4) women do not have to work because they are merely after a second income (Young, 1976, p. 83).

Borgstrom, Whiteley, and Rudolph studied the impact of recent societal changes on women's educational aspirations. The researchers utilized data from a student survey administered by the American Council on Education. They compared the data with survey responses of freshman students at the University of California, Santa Barbara (UCSB), from 1968 to 1978. They were attempting to characterize the University of California, Santa Barbara, campus culture today and show how and when UCSB students have changed over the past ten years.

> Women are currently much more undecided about their majors than are their male counterparts and even substantially more than women in past years, perhaps reflecting some confusion about the increased options available to them. While showing significant decreases in areas traditionally associated as being "women's majors" (English, fine arts, social sciences) as well as the less traditional math and statistics, "undecided" women students have shown increased interest in professional fields such as business, engineering and the health professions. (Borgstrom, Whiteley and Rudolph, 1980, pp. 6-7)

In a recent study by Puig-Casauranc, women in three fields of academic study were investigated. The Edwards Personal Preference Schedule (EPPS) and the Bem Sex-Role Inventory (BSRI) were used to assess the relationship between personality characteristics and psychological androgyny for females in traditional (female-dominated), nontraditional (male-dominated) and neutral (dominated by neither men nor women) fields of academic study. A random sample of 185 women from junior and senior classes of traditional, nontraditional and neutral academic departments participated in the study.

> The data indicated that the three groups could also be differentiated by their psychological androgyny scores. Significant differences for the sample group found the nontraditional group demonstrated the highest degree of psychological androgyny, although all three groups fell within the range defined as psychologically androgynous. (Puig-Casauranc, 1977, p. 5)

The most significant finding of the study was that the females in the three groups thought to be qualitatively different, tended to be more similar than disparate when it came to displaying and internalizing behaviors they perceived as appropriate (Puig-Casauranc, 1977, p. 7).

CHAPTER III
PROCEDURES USED IN CONDUCTING THE STUDY

The following procedures were used in the study:

1. The sample population included women students who were enrolled in the University of Central Florida College of Business Administration for at least one academic quarter between January, 1979, and June, 1980, and who were enrolled at the University of Central Florida during the Spring Quarter, 1980. This sample population was found by using University records and official University data tapes.
2. The sample population was stratified into two groups.

   Group I: Those women students enrolled in the College of Business Administration at the University of Central Florida during the Spring Quarter, 1980, who had completed ninety quarter hours of college study including at least two courses taught in the College of Business Administration.

   Group II: Those women students enrolled at the University of Central Florida during the Spring Quarter, 1980, who took at least two courses in business administration, and who had transferred out of the College of Business Administration at some point between January, 1979, and June, 1980.

3. The ages of women students in Groups I and II were obtained from the student's permanent record and official University data tapes.
4. Scholastic Aptitude Test scores, American College Test scores or Florida Twelfth Grade Test scores were obtained from the student's permanent record and official University data tapes. The scores were converted to a common base utilizing the State University System Equivalency Document (Jackson, 1977).
5. In the Spring Quarter of 1980, following the assignment of students to classes, a list of all women students in Groups I and II was compiled from University registration information.
6. Demographic data for Groups I and II were obtained from a demographic profile data sheet developed and administered by the investigator (Appendix A).
7. A letter (Appendix B) was mailed to each person selected, requesting her cooperation in completing the Bem Sex-Role Inventory which was administered in a conveniently located room on campus.
8. When a large enough sample was not produced by the procedure in #7, follow-up telephone calls, extending a second invitation to participate in the study, were made with careful attention being given to avoid pressuring students during the telephone conversation. A minimum of fifty percent participation by women students contacted in Groups I and II was sought.

9. The investigator administered the Bem Sex-Role Inventory (Appendix C).

10. Responses to the final question on the demographic profile data sheet, "If you were enrolled in the College of Business Administration after January, 1979, and subsequently have transferred to another college at the University of Central Florida, please indicate in the space provided your reasons for the transfers," were reviewed and categorized by a panel of knowledgeable professionals with expertise in the counselling of students. The purpose of categorizing responses was to enable the investigator to cite the main reasons indicated for transferring out of the College of Business Administration and to compare these responses with the findings of the study. It was recognized that those students in Group II may perceive their reasons for transferring out of the College of Business Administration in many different ways. This question was included only to give additional information concerning reasons for transferring out of the College of Business Administration. A check was made to determine if the reasons did or did not tend to support the major questions posed in this study.

11. As a means of providing comparative data on the masculinity, femininity and androgyny scores, a sample of junior and senior male students enrolled in selected classes in the College of Business Administration at the University of Central Florida (Group IV), and a sample of women students enrolled in selected

classes in the College of Education at the University of Central Florida who had never been enrolled in the College of Business Administration (Group III) completed the Bem Sex-Role Inventory in their classrooms. These data were included in the study to address questions surrounding the concept of the traditionally sex-typed person as follows: (1) Did women students majoring in education, a traditionally feminine field of study, produce a more feminine score on the Bem Sex-Role Inventory than did the other groups in the study? (2) Did men students majoring in business administration, a traditionally masculine field of study, produce a more masculine score on the Bem Sex-Role Inventory than did the other groups in the study?

CHAPTER IV
ANALYSIS OF DATA

A total of 159 subjects were included in the study. These subjects were divided into four groups as follows: Group I (thirty-three subjects) was composed of a sample of women enrolled in the College of Business Administration at the University of Central Florida during the spring quarter, 1980, all of whom had completed ninety quarter hours of college study, including at least two courses taught in the College of Business Administration. Group II (forty subjects) was made up of a sample of women students enrolled at the University of Central Florida during the spring quarter, 1980, all of whom had taken at least two courses in business administration, and who had transferred out of the College of Business Administration at some point between January, 1979, and June, 1980. Group III (twenty-three subjects) was a sample of women students enrolled in selected classes in the College of Education who had never been enrolled in the College of Business Administration. Group IV (sixty-three subjects) was a sample of male students enrolled in classes in the College of Business Administration during the spring quarter, 1980.

Groups I and II were the groups upon which this study was focused. Groups III and IV were included in the study as a means of providing comparative data; consequently, Groups III and IV were not used in the discriminant analysis portion of the study, but only in the descriptive analysis. Groups III and IV were included to address questions surrounding

the concept of the traditionally sex-typed person, such as: (1) Did women students majoring in education, a traditionally feminine field of study, produce a more feminine score on the Bem Sex-Role Inventory than did the other groups in the study? (2) Did men students majoring in business administration, a traditionally masculine field of study, produce a more masculine score on the Bem Sex-Role Inventory than did the other groups in the study?

The Statistical Package for the Social Sciences (SPSS) computer program was used to analyze the data. A discriminant analysis with significance at .05 was used to test the data. The discriminant analysis enabled the researcher to statistically distinguish between groups by selecting the independent variables on which the groups differed.

The discriminant analysis produced a discriminant function, a regression equation, with group membership as the dependent variable and demographic data along with scores on the Bem Sex-Role Inventory as the independent variables. The results statistically indicated to which group each subject probably belonged. The analysis discriminated between the two groups (Groups I and II) and predicted which subjects were or should be in either Groups I or II.

The discriminant analysis was used to predict whether a subject belonged to Group I or Group II on the basis of the selected independent variables, and to determine the importance of these independent variables in making optimal assignments of the subjects to the two groups. A more in-depth discussion of the discriminant analysis appears in the "Discriminant Analysis Findings" portion of this chapter.

A cross tabulation of variables by groups was performed to describe these variables as they related to the four groups in the study. These frequency distributions compared variables for one group to the same variables for another group. The exact differences were more clearly revealed when the percentages were examined because of the difference in total numbers of subjects in each of the four groups. An analysis of these four groups is reported in the following narrative discussion and tables.

Analysis of Descriptive Data

Twelve variables were used in the analysis of descriptive data. Seven variables from the demographic profile data sheet were pertinent to the descriptive analysis. The questions on the demographic profile data sheet illiciting current college of enrollment and previous colleges of enrollment were used only for verification of assignment of subjects to groups. The name of the high school attended and occupation of the student were recorded but were not used in the description of the groups.

The seven variables from the demographic profile data sheet which were considered pertinent to the descriptive analysis were (1) age, (2) marital status, (3) employment status, (4) number of children, (5) grade point average, (6) student's enrollment classification (freshman, sophomore, junior or senior), and (7) year of high school graduation. Two variables, the sex of the student and Scholastic Aptitude Test score or its equivalent, were taken from the student's permanent university record.

Sex

Included in the four groups cited in the study were sixty-three male business students, all of whom were included in Group IV, and ninety-six women students in Groups I, II, and III (Table 1).

Age

The 159 participants ranged in age from 18 to 55 years. Approximately 75 percent of the participants were under 25 years of age. Fifteen percent of Group I, 10 percent of Group II, 25.9 percent of Group III and 17.5 percent of Group IV ranged in age from 25 to 34 years. Six percent of Group I, 10 percent of Group II, 8.6 percent of Group III, and 8 percent of Group IV ranged in age from 35 to 55 years (Table 2).

Marital Status

The information on marital status was collected in categories of single or divorced, married, or widowed. An analysis of the 159 participants revealed that 73 percent were single or divorced, 24.5 percent were married and 2.5 percent were widowed. An analysis by group showed Group I, women business students, as having the highest percentage of single or divorced members. Women education majors (Group III) had the smallest percent of single or divorced members (Table 3).

Employment

An analysis of the employment status, which was collected in categories of full time, part time, or unemployed, indicated a high percentage (78.3) of unemployed members in Group III, women education majors. Group I had 30.3 percent unemployed, Group II had 40 percent unemployed and Group IV had 39.7 percent unemployed (Table 4).

Table I

Sex of Students In
Groups I, II, III and IV

	Number of Students		Percentage of Total Students
	Male	Female	Used in the Study
		Major Groups	
Group I[a]	0	33	20.8
Group II[b]	0	40	25.2
		Comparison Groups	
Group III[c]	0	23	14.5
Group IV[d]	63	0	39.5

[a]Women students enrolled in the College of Business Administration.

[b]Women students who had transferred out of the College of Business Administration into another college within the University.

[c]Women students enrolled in the College of Education.

[d]Men students enrolled in the College of Business Administration.

Table 2

Ages of Students
In Groups I, II, III and IV

Ages of Students	Percentages of Group I[a] (N=33)	Group II[b] (N=40)	Group III[c] (N=23)	Group IV[d] (N=63)
18 to 24	78.8	80.0	65.2	74.6
25 to 34	15.1	10.0	25.9	17.5
35 to 55	6.0	10.0	8.6	8.0

[a]Women students enrolled in the College of Business Administration.

[b]Women students who had transferred out of the College of Business Administration into another college within the University.

[c]Women students enrolled in the College of Education.

[d]Men students enrolled in the College of Business Administration.

Table 3

Marital Status of Students
In Groups I, II, III, and IV

	Number of Students and Percentages of Groups			
	Group I[a]	Group II[b]	Group III[c]	Group IV[d]
Single/Divorced				
Number	27	29	12	48
Percent	81.8	72.5	52.2	76.2
Married				
Number	6	9	9	15
Percent	18.2	22.5	39.1	23.8
Widowed				
Number	0	2	2	0
Percent	0	5.0	8.7	0

[a]Women students enrolled in the College of Business Administration.

[b]Women students who had transferred out of the College of Business Administration into another college within the University.

[c]Women students enrolled in the College of Education.

[d]Men students enrolled in the College of Business Administration.

Table 4

Employment Status of Students
In Groups I, II, III, and IV

Status	Number of Cases and Percentages of Groups			
	Group I[a]	Group II[b]	Group III[c]	Group IV[d]
Full Time				
Number	2	7	1	9
Percent	6.1	17.5	4.3	14.3
Part Time				
Number	21	17	4	29
Percent	63.6	42.5	17.4	46.0
Unemployed				
Number	10	16	18	25
Percent	30.3	40.0	78.3	39.7

[a]Women students enrolled in the College of Business Administration.

[b]Women students who had transferred out of the College of Business Administration into another college within the University.

[c]Women students enrolled in the College of Education.

[d]Men students enrolled in the College of Business Administration.

Grade Point Average

The range of grade point averages in college work for all groups was from 1.87 to 3.99 on a 4.00 scale. Grade point averages were determined from the students' permanent university records. The women students in Group II had the lowest grade point averages; twenty-three percent of this group had grade point averages of 2.49 or below. In all of the groups 44.6 percent to 56.3 percent had a grade point average of 3.0 or better in their college work (Table 5). No special minimum grade point average was required for admission to the College of Business Administration or the College of Education; however, a minimum of 2.0 overall grade point average was required for the admission of all degree seeking students (Table 5).

Student Classification

The information on student classification was collected in categories of freshmen, sophomore, junior, and senior. Seventy-seven and five tenths percent of the students in Group II, women students who transferred out of the College of Business Administration, were classified at the junior level or above. All the participants in Groups I, III, and IV were classified at the junior level or above (Table 6). At the University of Central Florida students are permitted to enter the college of their choice at the beginning of their freshman year.

Scholastic Aptitude Test Scores

Scholastic Aptitude Test scores or their equivalent, as measured on the American College Test or the Florida Twelfth Grade test, for Groups I and II were taken from the permanent university records. The scores ranged from 590 to 1350. The highest score possible is 1600 and the

Table 5

Grade Point Averages for Students
In Groups I, II, III, and IV

	Percentage of Each Group Within Grade Point Ranges[a]		
	1.87 to 2.49	2.50 to 2.99	3.00 and Above
Group I[b]	15.1	30.2	54.6
Group II[c]	22.5	32.5	45.0
Group III[d]	8.6	34.6	56.3
Group IV[e]	14.4	41.4	44.6

[a]Grade point averages are computed on a four point scale 4.0 = A grade.

[b]Women students enrolled in the College of Business Administration.

[c]Women students who had transferred out of the College of Business Administration into another college within the University.

[d]Women students enrolled in the College of Education.

[e]Men students enrolled in the College of Business Administration.

Table 6

Student Classifications
in Groups I, II, III and IV

Student Classifications	Percentages of Groups			
	Group I[a]	Group II[b]	Group III[c]	Group IV[d]
Freshman	0	10.0	0	0
Sophomore	0	12.5	0	0
Junior	24.2	45.0	69.6	9.5
Senior	75.8	32.5	30.4	90.5

[a]Women students enrolled in the College of Business Administration.

[b]Women students who had transferred out of the College of Business Administration into another college within the University.

[c]Women students enrolled in the College of Education.

[d]Men students enrolled in the College of Business Administration.

lowest is 400. Forty-five and two tenths percent of Group I scored over 1,000, as compared to 32.5 percent of Group II (Table 7). Scholastic Aptitude Test scores or their equivalents were not compiled for the subjects in Groups III and IV. These groups were included in the study for the purpose of comparing results on the Bem Sex-Role Inventory (Table 7).

Number of Children

The women students in the College of Education (Group III) reported having the grestest number of children; 34.7 percent had from one to three children. The greatest number of children reported by any one participant was six. A majority of each group had no children (Table 8).

Year of High School Graduation

Participants in the study reported the year of their graduation from high school on the demographic information sheet. The range was from 1943 to 1979 with 77 percent of the participants having graduated since 1973 (Table 9).

Analysis of Open-ended Question

Three professionals with expertise in the counselling of university students were selected to review and categorize the open-ended question on the demographic profile data sheet. Each reviewer had a minimum of ten years of academic and vocational counselling experience in institutions of higher education.

The open-ended question was, "If enrolled in the College of Business Administration after January, 1979, and subsequently transferred to another college at the University of Central Florida, please indicate in the space provided your reasons for the transfer."

Table 7

Scholastic Aptitude Test Scores
for Students in Groups I and II

Ranges for SAT Scores[a]	Percentages of Groups	
	Group I[b]	Group II[c]
590 - 800	03	18
801 - 1000	51	50
1001 - 1200	36	24
1201 - 1350	09	08

[a]SAT is the abbreviation for Scholastic Aptitude Test. The highest possible score is 1600.

[b]Women students enrolled in the College of Business Administration.

[c]Women students who had transferred out of the College of Business Administration into another college within the University.

Table 8

Number of Students in Groups I, II, III, and IV with Children

Number of Children	Group I[a] (N=33)	Group II[b] (N=40)	Group III[c] (N=23)	Group IV[d] (N=63)
One	1	3	3	1
Two	1	1	5	6
Three	1	2	0	3
Four	0	0	0	1
Five	0	1	0	0
Six	0	1	0	0
None	30	32	15	52

[a]Women students enrolled in the College of Business Administration.

[b]Women students who had transferred out of the College of Business Administration into another college within the University.

[c]Women students enrolled in the College of Education.

[d]Men students enrolled in the College of Business Administration.

Table 9

Year of High School Graduation
for Students in Groups I, II, III, and IV

	Year of Graduation from High School					
	1943 to 1959		1960 to 1969		1970 to 1979	
	Number	Percent	Number	Percent	Number	Percent
Group I[a]	2	6.1	2	6.0	29	87.9
Group II[b]	3	7.5	3	7.5	34	85.0
Group III[c]	2	8.6	3	12.9	18	78.0
Group IV[d]	3	4.8	7	11.2	53	84.2

[a]Women students enrolled in the College of Business Administration.

[b]Women students who had transferred out of the College of Business Administration into another college within the University.

[c]Women students enrolled in the College of Education.

[d]Men students enrolled in the College of Business Administration.

Approximately 43 percent of the forty students in Group II, those women students who transferred out of the College of Business Administration, responded to the open-ended question. Four broad categories of answers emerged in the process of grouping the participants' responses, and all responses fell into these four categories. They were (1) indecision as to field of study, (2) change of career interests, (3) expediency of completion of a degree in another field of study, and (4) boredom or lack of enthusiasm for the business curriculum.

The category receiving the greatest response was "boredom or lack of enthusiasm for the business curriculum." Forty-one percent, seven out of the seventeen responding to the question, were assigned to this category (Table 10). None of the respondents stated that the academic work in business administration was too difficult or that they transferred out of business administration because they were getting low grades in the business courses.

Descriptive Analysis of Bem Sex-Role Inventory

Sixty personality characteristics are listed on the Bem Sex-Role Inventory. Twenty of the characteristics are stereotypically feminine, twenty are stereotypically masculine and twenty serve as filler items. Participants in the study indicated how well each of the sixty personality characteristics described herself or himself on a scale from one to seven. The scale ranged from one, "Never or almost never true," to seven, "Always or almost always true." The sixty personality characteristics are placed on the Bem Sex-Role Inventory in the following manner: (1) The first

Table 10

Responses by Group II Students to the Four Categories Derived from the Open-ended Question on the Demographic Profile Date Sheet

Categories	Number of Responses* (N=17)
Indecision as to Field of Study	3
Change in Career Interests	3
Expediency of Completion of Degree in Another Field of Study	4
Boredom or Lack of Enthusiasm for the Business Curriculum	7

*Seventeen of the 40 students in Group II responded to the question.

Note: Open-ended question was, "If enrolled in the College of Business Administration after January, 1979, and subsequently transferred to another college at the University of Central Florida, please indicate in the space provided your reasons for the transfer."

adjective and every third one thereafter is masculine; (2) the second adjective and every third one thereafter is feminine; (3) the third adjective and every third one thereafter is filler.

Scoring of the Bem Sex-Role Inventory is conducted as follows:

> The first step is the calculation of each subject's femininity ("a") and masculinity ("b") scores, which are the averages of each subjects' ratings of the feminine and masculine adjectives on the BSRI. That is, a given subject's femininity score is the mean of that subject's ratings on the feminine adjectives, and that same subject's masculinity score is the mean of her or his ratings on the masculine adjectives. (Bem, 1979, p. 1)

The total score for each subject's ratings on the feminine items was divided by twenty, if all characteristics were rated by the subject, and the same procedure was used for calculating the ratings on the masculine characteristics. All subjects rated all items on the Bem Sex-Role Inventory. A feminine raw score (a) and a masculine raw score (b) were the result of this process.

The masculine and feminine standard scores were determined from the masculine and feminine mean raw scores, using Table 1 in the Administration and Scoring Guide for the Bem Sex-Role Inventory (Appendix D). A difference score was computed by subtracting the masculine standard score from the feminine standard score. The difference score was converted to a difference standard score by using Table 2 in the Administration and Scoring Guide for the Bem Sex-Role Inventory (Appendix D). The median for the feminine raw score, 4.90, and for the masculine raw score, 4.95, is based on normative data. The median for the difference standard score, also based on normative data, is 0 which was converted to a T-score of 50 by using Table 2 in the Administration and Scoring Guide for the Bem Sex-Role Inventory (Appendix D).

Each subject was classified into one of four categories based on the median raw scores of the normative sample and the subject's mean raw scores. All participants in the study were placed in one of the following four categories: (1) masculine, which denotes a low feminine score and high masculine score, (2) feminine, which denotes a low masculine score and a high feminine score, (3) androgynous, which denotes a high masculine score and a high feminine score, or (4) undifferentiated, which denotes a low masculine score and a low feminine score (Table 11). "High difference scores in either direction indicate a tendency to be strongly sex-typed, positive scores indicating femininity and negative scores indicating masculinity" (Bem, 1979, p. 3). Positive scores indicate a generally more feminine orientation, negative scores a more masculine orientation, and scores near zero an androgynous orientation.

Thirteen and three tenths percent of the subjects in Group I (women students enrolled in the College of Business Administration), 15.0 percent of the subjects in Group II (women students who had transferred out of the College of Business Administration), and 13.6 percent of the subjects in Group III (women students enrolled in the College of Education) were placed in the masculine category as a result of their scores on the Bem Sex-Role Inventory. Sixty-two and one tenth percent of the subjects in Group IV (men students enrolled in the College of Business Administration) were placed in the masculine category (Table 12).

Thirty-six and seven tenths percent of women students enrolled in the College of Business Administration (Group I) were classified as feminine as a result of their scores on the Bem Sex-Role Inventory. Thirty-seven

Table 11

Interpretation of Categories
Derived from the
Bem Sex-Role Inventory

Feminine Score	Masculine Score: Below Median	Masculine Score: Above Median
Below Median	Undifferentiated (low feminine - low masculine)	Masculine (low feminine - high masculine)
Above Median	Feminine (high feminine - low masculine)	Androgynous (high feminine - high masculine)

Medians Based on Normative Data

Feminine Raw Score	4.90
Masculine Raw Score	4.95

Table 12

Comparison of Undifferentiated, Masculine, Androgynous, and Feminine Bem Sex-Role Inventory Classifications by Group

Bem Sex-Role Inventory Classifications	Percentages of Groups			
	Group I[a]	Group II[b]	Group III[c]	Group IV[d]
Undifferentiated (low masculine and low feminine)	6.7	7.5	13.6	17.2
Masculine (low feminine and high masculine)	13.3	15.0	13.6	62.1
Androgynous (high feminine and high masculine)	43.3	40.0	45.5	19.0
Feminine (low masculine and high feminine)	36.7	37.5	27.3	1.7

[a]Women students enrolled in the College of Business Administration.

[b]Women students who had transferred out of the College of Business Administration into another college within the University.

[c]Women students enrolled in the College of Education.

[d]Men students enrolled in the College of Business Administration.

and one half percent of the women students who had transferred out of the College of Business Administration (Group II) and 27.3 percent of women students enrolled in the College of Education (Group III) were placed in the feminine category as a result of their scores on the Bem Sex-Role Inventory. The percent of male business students (Group IV) who were placed in the feminine category as a result of their scores on the Bem Sex-Role Inventory was 1.7.

Forty-three and three tenths percent of the subjects in Group I (women students enrolled in the College of Business Administration), 40.0 percent of the subjects in Group II (women students who had transferred out of the College of Business Administration), and 45.5 percent of the subjects in Group III (women students enrolled in the College of Education) were placed in the androgynous category as a result of their scores on the Bem Sex-Role Inventory. The percent of subjects in Group IV (men students enrolled in the College of Business Administration) who were placed in the androgynous category as a result of their scores on the Bem Sex-Role Inventory was 19.0.

Groups III and IV were included in the analysis of the four categories of masculine, feminine, androgynous, and undifferentiated in order to address the following questions. (1) Did women students majoring in education, a traditionally feminine field of study, produce a more feminine score on the Bem Sex-Role Inventory than did the other groups in the study? (2) Did men students majoring in business administration, a traditionally masculine field of study, produce a more masculine score on the Bem Sex-Role Inventory than did the other groups in the study? Women majoring in education (Group III) did not produce a more feminine score than did the other groups.

Twenty-seven and three tenths percent of the women majoring in education were categorized as feminine, as compared to 36.7 percent of women business majors, 37.5 percent of women who transferred out of the College of Business Administration, and 1.7 percent of the men business majors. Men students majoring in business administration did produce a more masculine score than did the other groups. Sixty-two and one tenth percent of men majoring in business administration were categorized as masculine, as compared to 13.3 percent of women business majors, 15.0 percent of women who transferred out of the College of Business Administration, and 13.6 percent of the women education majors.

Discriminant Analysis Findings

The data were analyzed through a discriminant analysis.

> The mathematical objective of discriminant analysis is to weigh and linearly combine the discriminating variables in some fashion so that the groups are forced to be as statistically distinct as possible.
>
> Discriminant analysis attempts to do this by forming one or more linear combinations of the discriminating variables. These "discriminant functions" are of the form
>
> $$D_1 = d_{11}Z_1 + d_{12}Z_2 + \ldots + d_{1p}Z_p$$
>
> where D_1 is the score on discriminant function 1, the d's are weighting coefficients and the Z's are the standardized values of the p discriminating variables used in the analysis. The maximum number of functions which can be derived is either one less than the number of groups or equal to the number of discriminating variables, if there are more groups than variables. Ideally, the discriminant scores (D's) for the cases within a particular group will be fairly similar. At any rate, the functions are formed in such a way as to maximize the separation of the groups. Once the discriminant functions have been derived, we are able to pursue the two research objectives of this technique; <u>analysis</u> and <u>classification</u>.

> The analysis aspects of this technique provide several tools for the interpretation of data. Among these are statistical tests for measuring the success with which the discriminating variables actually discriminate when combined into the discriminant functions....The result is often of major theoretical significance, and statistical tests are included for this purpose. Since the discriminant functions can be thought of as the axes of a geometric space, they can be used to study the spatial relationships among the groups. . . More importantly, the weighting coefficients can be interpreted much as in multiple regression or factor analysis. In this respect, they serve to identify the variables which contribute most to differentiation along the respective dimension (function). (Nie, 1975, pp. 435-436)

The discriminant analysis was used to statistically distinguish between Group I, women students enrolled in the College of Business Administration, and Group II, women students who transferred out of the College of Business Administration.

The analysis resulted in a linear combination of independent variables (discriminant function) that tended to maximize the separation of the two groups. The rule for determining the number of equations in a discriminant analysis is to utilize one function less than the number of groups in the study, or to use the number of equations (discriminant functions) equal to the number of discriminating variables, whichever is smaller. Consequently, one equation (discriminant function) was derived in this study because two groups were being studied.

When testing for statistical significance of the discriminating variables, a significance level of .05 was found.

The direct method was used in order to select the independent variables which would contribute to the discriminant analysis. All eleven of the possible independent variables were entered into the analysis concurrently, and the discriminant function was created directly from the entire set of

variables, with two variables being rejected or not contributing to the discriminant function. The direct method puts all possible variables in at one time, as opposed to a stepwise procedure wherein possible variables are entered one at a time.

The direct method of entry was selected to produce a discriminant function that would, to the best of its ability, statistically distinguish between Groups I and II.

Information concerning the methods used for assigning values to the eleven variables is discussed below, and the methods used for assigning values to each of the nine discriminating variables which surfaced are indicated by footnotes in Table 13.

When data are being collected, a process of measurement is used in order to assign a value or score to the observed phenomenon or variable. In this study an ordinal level of measurement was used for some of the variables. When it was possible to rank order a category according to some criteria, an ordinal level of measurement was used. For instance the order of freshman, sophomore, junior, and senior in the student classification variable was ranked 1, 2, 3, 4, with freshman being 1 and senior being 4. The ordinal level of measurement assumes a reasoned order for value or score assignment, but does not require a known distance between ranks or scores (Nie, 1975, p. 5).

"The interval level of measurement has an additional property in that the distances between the categories are defined in terms of fixed and equal units" (Nie, 1975, p. 5). Scholastic Aptitude Test scores, for instance, indicate the same or fixed distance between 800 and 900 or 1000 and 1100.

Table 13

Standardized Discriminant Function Coefficients at the .05 Level of Significance Presented in Order of Importance to the Discriminant Function and the Levels of Measurement Used in the Assignment of Values to the Discriminating Variables

Discriminating Variables (Assigned Values)	Standardized Discriminant Function Coefficients*	Levels of Measurement
Student Classification (freshman = 1, sophomore = 2, junior = 3, senior = 4)	0.854	Ordinal**
Marital Status (single/divorced = 1, married = 2, widowed = 3)	-0.632	Ordinal
Feminine Standard Score from the Bem Sex-Role Inventory (actual scores)	-0.368	Interval***
Scholastic Aptitude Test Score (actual scores)	0.287	Interval
Difference Standard Score from the Bem Sex-Role Inventory (actual scores)	0.158	Interval
Employment Status (full time = 1, part time = 2 unemployed = 3)	0.117	Ordinal
Age (actual ages)	0.041	Ratio****
Grade Point Average (actual averages)	-0.027	Ratio
Masculine Standard Score from the Bem Sex-Role Inventory (actual scores)	-0.023	Interval

*The influence of one variable to the function in relation to the influence of another variable may be made by ignoring the sign and comparing coefficients. Zero to +1 drives the case to Group I, and a 0 to -1 drives the case to Group II.

**Ordinal level measurements rank order categories according to some criteria.

***Interval level measurements have fixed and equal units of distance between categorical ranks.

****Ratio level measurements have known zero points and have fixed and equal distances between categorical values.

"The ratio level of measurement has all of the properties of an interval level with the additional property that the zero point is inherently defined by the measurement scheme" (Nie, 1975, p. 5). Age indicates the same or fixed distance between age 18 and 19 or age 25 and 26, and has the additional property of a zero point. Table 13 shows the values or scores assigned to each variable and the level of measurement used in each assignment.

The eleven variables subjected to the direct method included seven items from the demographic profile data sheet (1) age, (2) marital status, (3) employment status, (4) grade point average, (5) student classification, (6) number of children, and (7) year of high school graduation, one item from the permanent University file (Scholastic Aptitude Test score or its equivalent), and the three standard scores derived from the personality characteristics on the Bem Sex-Role Inventory (masculine standard score, feminine standard score, and difference standard score). Items six and seven from the demographic profile data sheet were rejected, leaving nine variables contributing to the discriminant function.

The nine discriminating variables which surfaced in the analysis as contributing to the discriminant function were (1) age of the participant, (2) marital status, (3) employment status, (4) grade point average, (5) student classification, (6) Scholastic Aptitude Test score, (7) Bem Sex-Role Inventory masculine standard score, (8) Bem Sex-Role Inventory feminine standard score, and (9) Bem Sex-Role Inventory difference standard score.

The means and standard deviations for the nine discriminating variables are presented in Tables 14 and 15.

Table 14

Means and Standard Deviations
for Discriminating Variables at .05 Level
of Probability for Groups I and II

Discriminating Variables	Group I[a] Mean	S.D.[c]	Group II[b] Mean	S.D.
Age, (range = 18 to 55)	23.21	6.10	23.70	7.71
Marital Status[d]	1.18	0.39	1.33	0.57
Employment Status[e]	2.24	0.56	2.23	0.73
Grade Point Average[f]	2.98	0.44	2.91	0.56
Student Classification	3.73	0.52	3.03	1.07
SAT Scores[g]	987.12	141.42	930.50	183.35

[a]Women students enrolled in the College of Business Administration.

[b]Women students who had transferred out of the College of Business Administration into another college with the University.

[c]S.D. is the abbreviation for standard deviation.

[d]Marital status was recorded as single or divorced (Value = 1), married (Value = 2), or widowed (Value = 3).

[e]Employment status was measured as full time (Value = 1), part time Value = 2), or unemployed (Value = 3).

[f]Grade point averages were computed on a four point scale (4.0 = A grade).

[g]Scholastic Aptitude Test scores are normally computed on a maximum range from 500 to 1500 points or higher. The current minimum score for admission to the University of Central Florida is 800.

Table 15

Means and Standard Deviations
for the Bem Sex-Role Inventory
Masculine, Feminine and Difference Standard Scores
for Groups I and II

Discriminating Variables[a]	Group I[b] Mean	S.D.[d]	Group II[c] Mean	S.D.
Masculine Standard Score[e] (range = 39 to 69)	52.67	10.69	54.30	9.26
Feminine Standard Score[f] (range = 44 to 73)	55.50	11.81	58.43	7.57
Difference Standard Score[g] (range = 51 to 82)	62.77	23.55	65.28	11.25

[a]Three of the nine variables which surfaced at a .05 level of significance during the discriminant analysis.

[b]Women students enrolled in the College of Business Administration.

[c]Women students who had transferred out of the College of Business Administration into another college within the University.

[d]S.D. is the abbreviation for standard deviation.

[e]Standard score computed from responses to twenty masculine personality characteristics on the Bem Sex-Role Inventory.

[f]Standard score computed from responses to twenty feminine personality characteristics on the Bem Sex-Role Inventory.

[g]Standard score computed from the difference between the masculine and feminine scores on the Bem Sex-Role Inventory.

The discriminant function coefficients were computed for the nine discriminating variables. The coefficients represent the relative contributions of the nine discriminating variables to the equation (discriminant function). They serve to identify the variables which contributed most to the discriminant function. The coefficients for the discriminating variables are shown on Table 13.

In determining the relative weight of a particular variable, the sign of the coefficient is ignored, and the value of the coefficient for any one variable may be compared to another. For instance, the student classification coefficient projects 20.8 times more influence on the discriminant function than does the age coefficient. The relative weight in this example is determined by dividing the coefficient for the age variable (.041) into the coefficient for the student classification variable (.854). (.854 divided by .041 = 20.8).

Discriminant scores were computed for each one of the participants in Group I and II. The computation process was as follows: The standard value for the first discriminating variable was multiplied by its corresponding coefficient; this product was added to the product of the second discriminating variable which likewise was calculated by multiplying the standard value of the variable by its corresponding coefficient. This process took place for each of the nine discriminating variables, resulting in the computation of a "discriminant score" for each of the subjects in Groups I and II (Table 16).

Table 16

Classification of Subjects in Groups I and II Utilizing Nine Discriminating Variables

Subjects	Actual Group Membership	Predicted Group Membership	Discriminant Scores***
1	1*	1	0.8478
2	1	1	1.7815
3	1	2****	-0.2951
4	1	1	1.0657
5	1	2****	-0.0610
6	1	1	1.0075
7	1	1	0.6711
8	1	1	0.5212
9	1	1	1.3583
10	1	2****	-0.6170
11	1	2****	-0.1134
12	1	1	1.6095
13	1	2****	-0.3881
14	1	1	0.3993
15	1	1	0.8615
16	1	1	0.5013
17	1	1	0.1766
18	1	2****	-0.2285
19	1	1	0.9171
20	1	1	1.5142
21	1	2****	-0.9658
22	1	1	1.3706
23	1	1	0.7354
24	1	1	1.4973
25	1	1	0.8941
26	1	2****	-0.0366
27	1	2****	-0.4384
28	1	1	1.1789
29	1	1	1.5886

*Women students enrolled in the College of Business Administration.

**Women students who had transferred out of the College of Business Administration.

***Scores obtained when coefficents are applied to the nine discriminating variables. Zero to +1 drives the case to Group I, and a 0 to -1 drives the case to Group II.

****These subjects were not properly classified in their original group.

NOTE: Age, marital status, employment status, grade point average, student classification, Scholastic Aptitude Test scores, and Bem Sex-Role Inventory masculine, feminine and difference scores were the nine discriminating variables.

Table 16-continued

Subjects	Actual Group Membership	Predicted Group Membership	Discriminant Scores***
30	1*	1	0.9984
31	1	1	0.2017
32	1	2****	-0.1695
33	1	1	0.7602
34	2**	2	-2.5037
35	2	2	-0.1481
36	2	1****	0.1248
37	2	2	-0.5548
38	2	2	-1.9723
39	2	2	-3.3995
40	2	2	-1.2594
41	2	2	0.0087
42	2	1****	0.5658
43	2	1****	0.6596
44	2	1****	1.0142
45	2	2	-1.1935
46	2	1****	1.1894
47	2	2	-2.5562
48	2	2	-1.8649
49	2	2	-0.9820
50	2	1****	1.6084
51	2	1****	0.3359
52	2	2	-0.1308
53	2	2	-0.5588
54	2	1****	0.6834
55	2	1****	0.2010
56	2	1****	0.2789
57	2	1****	0.4473
58	2	2	-0.5730

*Women students enrolled in the College of Business Administration.
**Women students who had transferred out of the College of Business Administration.
***Scores obtained when coefficients are applied to the nine discriminating variables. Zero to +1 drives the case to Group I, and a 0 to -1 drives the case to Group II.
****These subjects were not properly classified in their original group.
NOTE: Age, marital status, employment status, grade point average, student classification, Scholastic Aptitude Test scores, and Bem Sex-Role Inventory masculine, feminine and difference scores were the nine discriminating variables.

Table 16-continued

Subjects	Actual Group Membership	Predicted Group Membership	Discriminant Scores***
59	2**	1****	0.4533
60	2	2	-1.0115
61	2	1****	0.1311
62	2	2	-0.7055
63	2	2	-1.4451
64	2	2	-0.2870
65	2	2	-0.3365
66	2	2	-1.2436
67	2	2	-0.7151
68	2	2	-2.1282
69	2	2	-2.5279
70	2	1****	1.0655
71	2	2	-0.5948
72	2	2	-0.2146
73	2	1****	0.9951

*Women students enrolled in the College of Business Administration.
**Women students who had transferred out of the College of Business Administration.
***Scores obtained when coefficients are applied to the nine discriminating variables. Zero to +1 drives the case to Group I, and a 0 to -1 drives the case to Group II.
****These subjects were not properly classified in their original group.
NOTE: Age, marital status, employment status, grade point average, students classification, Scholastic Aptitude Test scores, and Bem Sex-Role Inventory masculine, feminine and difference scores were the nine discriminating variables.

Classification of Cases

> The use of discriminant analysis as a classification technique comes after the initial computation. Once a set of variables is found which provides satisfactory discrimination for the cases with known group memberships, a set of classification functions can be derived which will permit the classification of new cases with unknown memberships. (Nie, Hull, Jenkins, Steinbrenner and Brent, p. 436)

If variables are found which do well in predicting to which group the subjects belong, then these variables can be used to predict the likelihood of group membership for other students.

As a check on how well the equation (discriminant function) worked, the subjects were placed in either Group I or Group II according to the discriminant scores on the nine discriminating variables. Group membership was predicted, based on the nine discriminating variables. The goal of the classification process as it relates to a discriminant analysis was to measure the success of the equation (discriminant function) by observing how many subjects were properly classified into their groups. Twenty-three subjects out of thirty-three subjects in Group I, women business majors, were properly classified. Twenty-five subjects out of forty subjects in Group II, women students who transferred out of the College of Business into another college within the University, were properly classified into their group (Table 16).

The data for Groups I and II were subjected to the classification process. When the coefficients were applied to the nine discriminating variables, and a discriminant score of less than zero to minus one resulted, the subject was placed in Group II. A discriminant score of more than zero to plus one resulted in the subject's being placed in Group I for classification purposes.

When all the subjects in Group I were subjected to the classification process, 69.7 percent of them were properly placed in Group I; consequently, it was possible to predict group membership for Group I, women business majors, 69.7 percent of the time.

When all the subjects in Group II were subjected to the classification process, 62.5 percent of them were properly placed in Group II; consequently, it was possible to predict group membership for Group II, women students who transferred from the College of Business Administration to another college in the University, 62.5 percent of the time.

For any new woman student wishing to enter as a freshman in the College of Business Administration from whom data on the nine discriminating variables could be gathered, and for whom a discriminant score could be computed, the classification process could be performed. If she were placed in Group I as a result of her discriminant score, it could be predicted at a 69.7 percent level of probability that she would remain enrolled in the College of Business Administration. If as a result of the classification process, the same new woman student was placed in Group II, it could be predicted at a 62.5 percent level of probability that she would transfer out of the College of Business Administration.

Test of Hypotheses and Results

The hypotheses of this study were that an individual's membership in either Group I or Group II is predictable on the basis of age, academic ability, and the Bem Sex-Role Inventory characteristics. The following sub-hypotheses in the null form served as the basis for making predictions of group membership.

1. The masculine score derived from the Bem Sex-Role Inventory is a variable which does not discriminate when used in the prediction of group membership in either Groups I or II.

This null hypothesis was rejected. The masculine standard score was one of the nine variables which was shown to be discriminating in the discriminant analysis. The corresponding coefficient for the masculine standard score was -.023 at the .05 level of significance and was ninth out of nine discriminating variables. The coefficient for the next highest discriminating variable, grade point average (-.027), provides 1.17 times the influence of the coefficient for the masculine variable (-.023). The variable with the greatest influence, student classification (.854), has 37.13 times more influence than does the coefficient for the masculine variable (-.023). The masculine variable, combined with the remaining eight variables in the discriminant function, resulted in the successful classification of 69.7 percent of the subjects in Group I and 62.5 percent of the subjects in Group II (Table 13).

2. The feminine score derived from the Bem Sex-Role Inventory is a variable which does not discriminate when used in the prediction of group membership in either Groups I or II.

This null hypothesis was rejected. The feminine standard score was one of the nine variables that was shown to be discriminating in the discriminant analysis. The coefficient for the feminine standard score was -.368 at the .05 level of significance and was third out of nine discriminating variables. The coefficient for the next highest discriminating variable, marital status (-.632), provides 1.71 times the influence of the coefficient for the feminine variable (-.368). The variable with the greatest influence, student classification (.854), has 2.32 times more

influence than does the coefficient for the feminine variable (-.368). The feminine variable, combined with the remaining eight variables in the discriminant function, resulted in the successful classification of 69.7 percent of the subjects in Group I and 62.5 percent of the subjects in Group II (Table 13).

3. The androgyny classification derived from the Bem Sex-Role Inventory is a variable which does not discriminate when used in the prediction of group membership in either Group I or II.

This null hypothesis was rejected. The androgynous classification was determined through the difference standard score. The difference standard score was one of the nine variables that was shown to be discriminating in the discriminant analysis. The corresponding coefficient for the difference standard score was .158 at the .05 level of significance and was fifth out of nine discriminating variables. The coefficient for the next highest discriminating variable, Scholastic Aptitude Test score (.287), provides 1.82 times the influence of the coefficient for the difference standard score (.158). The variable with the greatest influence, student classification (.854), has 5.41 times more influence than does the coefficient for the difference score (androgyny) variable (.158). This difference variable, combined with the remaining eight variables in the discriminant function, resulted in the successful classification of 69.7 percent of the subjects in Group I and 62.5 percent of the subjects in Group II (Table 13).

4. The age of the individual is a variable which does not discriminate when used in the prediction of group membership in either Groups I or II.

This null hypothesis was rejected. The age of the participants was one of the nine variables that surfaced as being discriminating. The corresponding coefficient for age was .041 at the .05 level of significance and was seventh out of nine discriminating variables. The coefficient for the next highest discriminating variable, employment status (.117), provides 2.85 times the influence of the coefficient for age (.041). The variable with the greatest influence, student classification (.854), has 20.83 times more influence than does the coefficient for the age variable (.041). The inclusion of the age variable, along with the remaining eight variables which were discriminating, resulted in the ability of the function to successfully predict group membership 69.7 percent of the time for Group I and 62.5 percent of the time for Group II (Table 13).

5. The individual's academic ability is a variable which does not discriminate when used in the prediction of group membership in either Groups I or II.

This null hypothesis was rejected. Academic ability, as measured by the Scholastic Aptitude Test score, or its equivalent, was one of the nine variables which resulted from the discriminant analysis. The corresponding coefficient for academic ability was .287 at the .05 level of significance and was fourth out of nine discriminating variables. The coefficient for the next highest discriminating variable, feminine standard score (-.368), provides 1.28 times the influence of the coefficient for academic ability (.287). The variable with the greatest influence, student classification (.854), has 2.98 times more influence than does the coefficient for the academic ability variable (.287). The inclusion of the academic

ability variable, along with the remaining eight discriminating variables, resulted in the successful classification of 69.7 percent of cases in Group I and 62.5 percent of the cases in Group II (Table 13).

CHAPTER V
CONCLUSIONS AND RECOMMENDATIONS

The purpose of this study was to determine if the characteristics of masculinity, femininity, androgyny, academic ability and age could be used to predict whether women students in the College of Business Administration at the University of Central Florida would remain in that college or transfer to another college within the University.

Data was collected from four groups of students at the University of Central Florida. The two major groups were Group I, women students enrolled in the College of Business Administration, and Group II, women students who had transferred out of the College of Business Administration into another college within the University. Group III, women students enrolled in the College of Education, and Group IV, men students enrolled in the College of Business Administration, were not included for the purpose of predicting retention; these two groups were used to address questions surrounding the concept of the traditionally sex-typed person, such as: (1) Did women students majoring in education, a traditionally feminine field of study, produce a more feminine score on the Bem Sex-Role Inventory than did the other groups in the study? (2) Did men students majoring in business administration, a traditionally masculine field of study, produce a more masculine score on the Bem Sex-Role Inventory than did the other groups in the study?

Eleven variables for students in Groups I and II were subjected to a discriminant analysis technique and nine of these variables surfaced as discriminating at the .05 level of significance. Listed according to their relative influence in the prediciton of group membership (either Group I or Group II), the nine discriminating variables were, (1) student classification, (2) marital status, (3) Bem Sex-Role Inventory feminine standard score, (4) Scholastic Aptitude Test score (5) Bem Sex-Role Inventory difference standard score, (6) employment status, (7) age, (8) grade point average and (9) Bem Sex-Role Inventory masculine standard score. Although age, academic ability, masculinity, femininity, and androgyny (as determined through the difference score on the Bem Sex-Role Inventory) were variables that surfaced as discriminating in the analysis, only femininity (feminine standard score) realized a coefficient with relatively strong influence on the prediction of group membership.

Analyzing of data on the nine discriminating variables for a new woman student, who as a freshman selected business administration as her major field of study, will enable a prediction to be made regarding the probability of her remaining in the College of Business Administration. A classification made as a result of the discriminant analysis of her data that would put her in the group which would indicate she would tend to remain in the College of Business Administration could be said to be correct 69.7 percent of the time. A classification made as a result of the discriminant analysis of her data which put her in the group that would indicate she would tend to transfer out of the College of Business Administration could be said to be correct 62.5 percent of the time. This

conclusion is drawn because group membership was predictable in 69.7 percent of the cases classified in Group I, women business majors, and 62.5 percent of the cases in Group II, women who had transferred out of business administration. The combination of the nine discriminating variables in a discriminant analysis made these predictions possible.

Students in Group I, women students enrolled in the College of Business Administration, and Group II, women students who had transferred out of the College of Business Administration, were similar in age, marital status, and employment status. Groups I and II also were similar in academic ability, as measured by grade point averages and Scholastic Aptitude Test scores or their equivalents.

Students in Group II, women students who had transferred out of the College of Business Administration, apparently had not made the transfer for reasons of poor academic ability. Thirty-nine out of forty students in Group II maintained an over-all grade point average of 2.0 or better. Those responding to the open-ended question (seventeen out of forty) did not indicate that their transfer had anything to do with the business administration courses being too difficult for them; however, it is likely that students would not tend to state that course difficulty was a factor in their transferring out of the College of Business Administration. They might have tended to omit an answer to the question rather than state that the work was too difficult. The poor response to the open-ended question leaves real doubt as to the students' reasons for transferring out of Business Administration.

From Dr. Sandra Bem's research on sex role characteristics, the assumption has been made that those people with androgynous traits can be said to have a more balanced personality than do those with strong masculine or strong feminine traits. According to this study, women business majors were classified as androgynous at a slightly higher percentage rate (43.3 percent as opposed to 40.0 percent) than were women who transferred out of the College of Business Administration. In the comparison groups, Groups III and IV, it was interesting to note that women education majors in Group III had a higher percentage of those classified as androgynous than did any other group. It was also interesting to note that Group III had the largest percentage of older members (over 25), the largest percentage of married subjects, and the largest percentage of members with children than did any other group. It seems reasonable to conclude that maturity is a definite factor in women students' self perceptions, which tend to put them into an androgynous classification on the Bem Sex-Role Inventory. Group IV, men business majors, tended to be strongly sex-typed with 62.1 percent classified as masculine, and only 19.0 percent classified as androgynous.

Recommendations

1. It is recommended that similar studies, using the same measurement instruments in combination with additional measurement instruments, be conducted for the purpose of strengthening or expanding the discriminant function and increasing its ability to predict the retention or transfer of women students in business administration.

2. It is recommended that similar studies, using the same measurement instruments in combination with additional measurement instruments, be conducted for the purpose of strengthening or expanding a discriminant function and increasing its ability to predict the retention or transfer of men students in business administration.
3. Due to the limitations of this study to one institution of higher education, it is recommended this study be replicated in other institutions.
4. In counseling women students who designate business administration as a major field of study, counselors should gather and analyze data on the nine variables cited in this study for the purpose of counseling these students.
5. Additional studies should be done to determine the reasons students transfer out of the College of Business Administration.
6. Studies should be done to find answers to the following questions: Does the business administration curriculum and the teaching of that curriculum tend to attract and retain students with certain sex-role characteristics? If this is true, should efforts be made to change the curriculum and/or the methods of teaching? Would such changes produce students who would be more effective in their jobs in the business community? Is the business administration curriculum tailored to be more attractive and palatable to those students who tend to have more masculine characteristics than androgynous or feminine characteristics?

APPENDIX A

DEMOGRAPHIC PROFILE DATA SHEET

PERSONAL INFORMATION FORM

Social Security # _____

Phone # _____

Name: _____
(Last) (First) (Middle/Maiden)

Address at which you can be reached:

Spring Quarter, 1980 _____
(Street) (City) (State) (Zip)

Summer Quarter, 1980 _____
(Street) (City) (State) (Zip)

Birthdate: _____ Age: _____

Marital Status: _____ Single/Divorced _____ Married _____ Widowed

Employment outside the home: _____Full Time _____Part Time _____Unemployed

Occupation: _____

Number of Children _____ Grade Point Average _____
(Overall College Work, Including Junior College, If Applicable)

Student Classification: Freshman Sophomore Junior Senior
(Circle one)

College at U C F in which you are currently enrolled _____

If you have been enrolled in a college at U C F other than the one in which you are now enrolled, please list those college in order of Enrollment

_____ _____ _____ _____

High School from which you graduated: _____ Year _____

OVER

Personal Information Form: (continued)

If you are currently enrolled in the College of Business Administration, do not answer the following question on this Personal Information Form.

> If you were enrolled in the College of Business Administration after January 1, 1979, and subsequently have transferred to another college at UCF, please indicate below your reasons for the transfer.

APPENDIX B

LETTER TO GROUPS I AND II

May 6, 1980

Dear

One of our primary goals is to lend assistance to students enrolled at the University of Central Florida as they work toward the successful completion of their academic programs. As part of our effort to assist you, we need to gather information that will enable us to develop and offer programs that will help you reach your educational and professional goals.

You have been selected as part of a random sample of women students; consequently, your participation will be critical to the accuracy of this study. Please be assured that your involvement will be treated confidentially and will be used only in combination with others to compare responses.

Information will be gathered during the end of Spring Quarter. We would appreciate your taking about 10 to 15 minutes of your time while on campus to come by Room 282 in the Administration Building any time during the hours posted below. In return we would be happy to share with you a summary of the research results and our plans to provide programs to enhance your professional development.

Thursday,	May 22	10 a.m. to 3 p.m.	Room 280, Conference Room
Friday,	May 23	10 a.m. to 3 p.m.	Room 280, Conference Room
Tuesday,	May 27	10 a.m. to 3 p.m.	Room 280, Conference Room
Wednesday,	May 28	10 a.m. to 3 p.m.	Room 280, Conference Room
Thursday,	May 29	10 a.m. to 3 p.m.	Room 280, Conference Room

Sincerely,

Carol P. Wilson
Dean of Women

CPW:o

APPENDIX C

INSTRUCTIONS FOR THE BEM SEX-ROLE INVENTORY AND THE BEM SEX-ROLE INVENTORY

BEM INVENTORY

Developed by Sandra L. Bem, Ph.D.

Name _____ Age _____ Sex _____

Phone No. or Address _____

Date _____ 19___ _____

If a student: School _____ Yr. in School___

If not a student: Occupation _____

DIRECTIONS

On the opposite side of this sheet, you will find listed a number of personality characteristics. We would like you to use those characteristics to describe yourself, that is, we would like you to indicate, on a scale from 1 to 7, how true of you each of these characteristics is. Please do not leave any characteristic unmarked.

Example: sly

Write a 1 if it is never or almost never true that you are sly.
Write a 2 if it is usually not true that you are sly.
Write a 3 if it is sometimes but infrequently true that you are sly.
Write a 4 if it is occasionally true that you are sly.
Write a 5 if it is often true that you are sly.
Write a 6 if it is usually true that you are sly.
Write a 7 if it is always or almost always true that you are sly.

Thus, if you feel it is sometimes but infrequently true that you are "sly," never or almost never true that you are "malicious," always or almost always true that you are "irresponsible," and often true that you are "carefree," then you would rate these characteristics as follows:

Sly	3	Irresponsible	7
Malicious	1	Carefree	5

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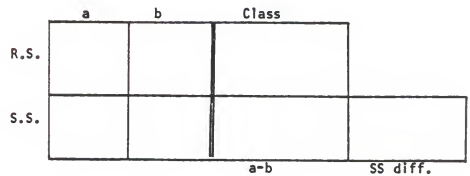
1	2	3	4	5	6	7
Never or almost never true	Usually not true	Sometimes but infrequently true	Occasionally true	Often true	Usually true	Always or almost always true

Defend my own beliefs	Adaptable	Flatterable
Affectionate	Dominant	Theatrical
Conscientious	Tender	Self-Sufficient
Independent	Conceited	Loyal
Sympathetic	Willing to take a stand	Happy
Moody	Love Children	Individualistic
Assertive	Tactful	Soft-spoken
Sensitive to needs of others	Aggressive	Unpredictable
Reliable	Gentle	Masculine
Strong personality	Conventional	Gullible
Understanding	Self-reliant	Solemn
Jealous	Yielding	Competitive
Forceful	Helpful	Childlike
Compassionate	Athletic	Likeable
Truthful	Cheerful	Ambitious
Have Leadership abilities	Unsystematic	Do not use harsh language
Eager to soothe hurt feelings	Analytical	Sincere
Secretive	Shy	Act as a leader
Willing to take risks	Inefficient	Feminine
Warm	Make decisions easily	Friendly



APPENDIX D

ADMINISTRATION AND SCORING GUIDE FOR THE BEM SEX-ROLE INVENTORY

ADMINISTRATION AND SCORING GUIDE FOR THE BEM SEX-ROLE INVENTORY*

Sandra Lipsitz Bem, Ph.D.
Cornell University

INTRODUCTION

Both in psychology and in society at large, femininity and masculinity have long been conceptualized as opposite ends of a single bipolar dimension. More recently, however, scholars in a number of disciplines have begun to concern themselves with the concept of psychological androgyny, a term that denotes the integration of femininity and masculinity within a single individual. The concept of psychological androgyny implies that it is possible for an individual to be both compassionate and assertive, both expressive and instrumental, both feminine and masculine, depending upon the situational appropriateness of these various modalities; and it further implies that an individual may even blend these complementary modalities in a single act, being able, for example, to fire an employee if the circumstances warrant it but with sensitivity for the human emotion that such an act inevitably produces.

Before empirical research on the concept of psychological androgyny could be initiated, however, it was necessary to develop a new type of sex-role inventory, one that would not automatically build in an inverse relationship between femininity and masculinity as previous inventories had done. On most inventories, items are empirically defined as feminine or masculine on the basis of differential endorsement by females and males, and a person filling out the inventory is said to be either feminine or masculine as a function of which sex she or he most closely resembles. Although it is possible for a person to earn a score that falls halfway between the two extremes and thereby reveal that she or he does not closely resemble either sex, a person cannot make the strong statement on such an inventory that she or he is androgynous.

The Bem Sex-Role Inventory (BSRI) was designed to implement empirical research on psychological androgyny. It contains 60 personality characteristics, 20 of which are stereotypically feminine (e.g., affectionate, gentle, understanding, sensitive to the needs of others), and 20 of which are stereotypically masculine (e.g., ambitious, self-reliant, independent, assertive). The BSRI also contains 20 characteristics that serve as filler items (e.g. truthful, happy, conceited). When taking the BSRI, a person is asked to indicate on a 7-point scale how well each of the 60 characteristics describes herself or himself. The scale ranges from 1 ("never or almost never true") to 7 ("Always or almost always true") and is labeled at each point.

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*This material is distributed free with orders for the Bem Sex-Role Inventory pending publication of a complete Manual for the test. Copyright 1979, by Consulting Psychologist Press, Inc., 577 College Avenue, Palo Alto, CA 94306.

The BSRI has two features distinguishing it from most masculinity-femininity scales. The BSRI treats femininity and masculinity as two independent dimensions rather than as two ends of a single dimension, thereby enabling a person to indicate whether she or he is high on both dimensions ("androgynous"), low on both dimensions ("undifferentiated") or, high on one dimension but low on the other (either "feminine" or "masculine").

In addition, the BSRI is based on a conception of the traditionally sex-typed person as someone who is highly attuned to cultural definitions of sex-appropriate behavior and who uses such definitions as the ideal standard against which her or his own behavior is to be evaluated. In this view, the traditionally sex-typed person is motivated to keep her or his behavior consistent with an idealized image of femininity or masculinity, a goal she or he presumably accomplishes both by selecting behaviors and attributes that enhance the image and by avoiding behaviors and attributes that violate the image. Accordingly, items were selected as feminine or masculine on the basis of cultural definitions of sex-typed social desirability and not on the basis of differential endorsement by females and males, i.e., a characteristic qualified as feminine if it was judged to be traditionally more desirable in American society for a woman than for a man, and it qualified as masculine if it was judged to be more desirable in American society for a man than for a woman.

For a full discussion of the development of the BSRI, the reader should consult The Measurement of Psychological Androgyny by Sandra L. Bem, Journal of Consulting and Clinical Psychology, 1974, Vol. 42, pp. 155-162.

ADMINISTRATION AND SCORING

The BSRI is essentially self-administering and may be given to large groups as well as to individuals. It has also been administered by mail in several studies. The inventory consists of 60 adjectives and phrases printed on a single sheet with instruction and space for personal information about the subject on the reverse side. Although it has been used primarily with college students and adults, the items in the BSRI should be comprehensible to most upper elementary school children.

The test is labeled simply "Bem Inventory" to reduce the possibility that responses might be influenced by a knowledge of the purpose of the scales. Most subjects complete the original inventory in 15 minutes or less and the short form in 10 minutes. The test is arranged so that the 30 short form items appear first and, where time is limited, subjects may be instructed to stop after the item "conventional" or at the heavy black line in the middle column.

It may be helpful to remind subjects orally that it is important that they not skip any items. Questions about the meaning of any item should be answered in as neutral a fashion as possible. It is recommended that lead pencils with erasers be used so that any changes in responses will be clearly made to facilitate accurate scoring.

Handscoring the BSRI is a relatively simple clerical task which may be facilitated by use of a pocket calculator. The first step is the calculation of each subject's Femininity ("a") and Masculinity ("b") scores, which are the averages of subject's ratings of the feminine and masculine adjectives on the BSRI. That is a given subject's Femininity Score is the mean of that subject's ratings on the feminine adjectives, and that same subject's Masculinity Score is the mean of her or his ratings on the masculine adjectives. The placement of adjectives on the BSRI is as follows:

1) The first adjective and every third one thereafter is masculine.
2) The second adjective and every third one thereafter is feminine.
3) The third adjective and every third one thereafter is filler.

Users may wish to make templates for the two scales by punching holes in blank answer sheets so that only the feminine or masculine ratings are visible at any one time.

In any event, total the sum of the ratings for either scale and divide by the number of items rated. Unless the subject has omitted items, the divisor will be 20 for the original form or 10 for the short form, but it is important to correct the divisor when items have been omitted.

The average of the ratings for the Femininity scale is entered in box for the "a" raw score (RS) at the bottom of the answer sheet. The average of the Masculinity ratings is entered in the box labeled "b".

Now look up the standard scores (SS) for each of the raw scores using Table 1, page 4,* and enter them in the SS boxes under the raw score boxes. The T-scores in Table 1 are adjusted so that females and males are equally represented. Be careful to use the correct column depending upon whether you have administered the original or the short form.

Next obtain the Difference Score by subtracting the "b" SS from the "a" SS. Be sure to retain the correct sign, plus (+) for positive and minus (-) for negative. High scores in either direction indicate a tendency to be strongly sex-typed (or sex-reversed), positive scores indicating femininity and negative scores indicating masculinity.

After obtaining the a-b score, consult Table 2 to find the Standard Score for the difference. Note that one column in Table 2 gives the Short Form SS's and one gives the Original Form SS's.

Now you may return to the upper (raw score) boxes and classify each subject in one of four categories based on the relationship between the median raw scores of the normative sample and the subject's scores on each scale.

*Instructions for scoring by computer using punched cards are available without charge from the Publisher.

Femininity Score		Masculinity Score: Below Median	Masculinity Score: Above Median
	Below Median	Undifferentiated (low-low)	Masculine (low fem.-high masc.
	Above Median	Feminine (High fem.-low masc.)	Androgynous (high fem.-high masc.)

Based on the normative data on Stanford students (sexes combined), the medians are as follows:

	Original Form	Short Form
Femininity RS	4.90	5.50
Masculinity RS	4.95	4.80

For a discussion of the significance of the classification, see Bem, S. L. On the Utility of Alternative Procedures for Assessing Psychological Androgyny. Journal of Consulting and Clinical Psychology, 1977, Vol. 45, pp. 196-205, as well as the article referred to on Page 2.

*The normative data in Tables 1 and 2 is based on samples of Stanford University undergraduates (476 males and 340 females) weighted to equalize the sex distribution.

Table 1

T-Scores for Femininity and Masculinity
Based on the 1978 Stanford Sample (Sexes Combined) N=816

Femininity (a) Stand. Score		Raw Score	Masculinity (b) Stand. Score		Femininity (a) Stand. Score		Raw Score	Masculinity (b) Stand. Score	
Orig	Short		Short	Orig	Orig	Short		Short	Orig
-15	-5	1.00	2	-8	36	33	4.00	40	36
-11		1.05		-7	37		4.05		37
-13	-4	1.10	3	-7	38	34	4.10	41	38
-12		1.15		-6	39		4.15		38
-11	-3	1.20	5	-5	39	35	4.20	42	39
-11		1.25		-4	40		4.25		40
-10	-2	1.30	6	-4	41	36	4.30	43	40
-9		1.35		-3	42		4.35		41
-9	0	1.40	7	-2	43	38	4.40	45	42
-7		1.45		-1	44		4.45		43
-6	1	1.50	8	-1	45	39	4.50	46	43
-5		1.55		0	45		4.55		44
-5	2	1.60	10	1	46	40	4.60	47	45
-4		1.65		1	47		4.65		46
-3	3	1.70	11	2	48	41	4.70	48	46
-2		1.75		3	49		4.75		47
-1	5	1.80	12	4	50	43	4.80	50	48
0		1.85		4	51		4.85		49
1	6	1.90	13	5	51	44	4.90	51	49
1		1.95		6	52		4.95		50
2	7	2.00	15	7	53	45	5.00	52	51
3		2.05		7	54		5.05		51
4	8	2.10	16	8	55	46	5.10	53	52
5		2.15		9	56		5.15		53
6	10	2.20	17	10	56	48	5.20	55	54
6		2.25		10	57		5.25		54
7	11	2.30	18	11	58	49	5.30	56	55
8		2.35		12	59		5.35		56
9	12	2.40	20	13	60	50	5.40	57	57
10		2.45		13	61		5.45		57
11	14	2.50	21	14	61	52	5.50	58	58
12		2.55		15	62		5.55		59
13	15	2.60	22	15	63	53	5.60	60	60
13		2.65		16	64		5.65		61
14	16	2.70	23	17	65	54	5.70	61	61

Table 1-continued

Femininity(a) Stand. Score		Raw Score	Masculinity(b) Stand. Score		Femininity(a) Stand. Score		Raw Score	Masculinity(b) Stand. Score	
Orig	Short		Short	Orig	Orig	Short		Short	Orig
15		2.75		18	66		5.75		62
16	17	2.80	25	18	67	55	5.80	62	63
17		2.85		19	67		5.85		63
17	19	2.90	26	20	68	57	5.90	63	64
18		2.95		21	69		5.95		65
19	20	3.00	27	21	70	58	6.00	65	65
20		3.05		22	71		6.05		66
21	21	3.10	28	23	72	59	6.10	66	67
22		3.15		24	73		6.15		68
23	22	3.20	30	24	73	60	6.20	67	68
23		3.25		25	74		6.25		69
24	24	3.30	31	26	75	62	6.30	68	70
25		3.35		26	76		6.35		71
26	25	3.40	32	27	77	63	6.40	70	71
27		3.45		28	78		6.45		72
27	26	3.50	33	29	78	64	6.50	71	73
28		3.55		29	79		6.55		74
29	27	3.60	35	30	80	65	6.60	72	74
30		3.65		31	81		6.65		75
31	28	3.70	36	32	82	67	6.70	73	76
32		3.75		32	83		6.75		76
33	30	3.80	37	33	84	68	6.80	75	77
34		3.85		34	84		6.85		78
34	31	3.90	38	35	85	69	6.90	76	79
35		3.95		35	86		6.95		79
					87	71	7.00	77	80

Table 2

T-Scores for the Femininity minus Masculinity Difference

Short Form T-Score	Diff. SS (a-b)	Orig. Form T-Score	Short Form T-Score	Diff. SS (a-b)	Orig. Form T-Score
12	-50	17	51	+1	51
13	-49	17	52	+2	51
13	-48	18	52	+3	52
14	-47	19	53	+4	53
15	-46	19	54	+5	53
16	-45	20	55	+6	54
17	-44	21	55	+7	55
17	-43	21	56	+8	55
18	-42	22	57	+9	56
19	-41	23	58	+10	57
20	-40	23	58	+11	57
20	-39	24	59	+12	58
21	-38	25	60	+13	59
22	-37	25	61	+14	59
23	-36	26	61	+15	60
23	-35	27	62	+16	61
24	-34	27	63	+17	61
25	-33	28	64	+18	62
26	-32	29	64	+19	63
26	-31	29	65	+20	63
27	-30	30	66	+21	64
28	-29	31	67	+22	65
29	-28	31	67	+23	65
29	-27	32	68	+24	66
30	-26	33	69	+25	67
31	-25	33	70	+26	67
32	-24	34	71	+27	68
32	-23	35	71	+28	69
33	-22	35	72	+29	69
34	-21	36	73	+30	70
35	-20	37	74	+31	71
36	-19	37	74	+32	71
36	-18	38	75	+33	72
37	-17	39	76	+34	73
38	-16	39	77	+35	73
39	-15	40	77	+36	74
39	-14	41	78	+37	75
40	-13	41	79	+38	75
41	-12	42	80	+39	76
42	-11	43	80	+40	77

Table 2-continued

Short Form T-Score	Diff. SS (a-b)	Orig. Form T-Score	Short Form T-Score	Diff. SS (a-b)	Orig. Form T-Score
42	-10	43	81	+41	77
43	-9	44	82	+42	78
44	-8	45	83	+43	79
45	-7	45	83	+44	79
45	-6	46	84	+45	80
46	-5	47	85	+46	81
47	-4	47	86	+47	82
48	-3	48	87	+48	82
48	-2	49	87	+49	83
49	-1	49	88	+50	84
50	0	50			

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BIOGRAPHICAL SKETCH

Carol Popejoy Wilson was born in Bloomington, Illinois, July 2, 1941. She moved to Orlando, Florida, in 1950, where she attended grade school, junior high school and high school. She was granted a Bachelor of Science degree in business administration from the University of Florida in 1963, and a Master of Business Administration degree from Rollins College in 1966.

Carol was employed at the Coca-Cola Company, Foods Division, from 1963 to 1968. She became an instructor of business administration at the University of South Florida in 1968. Returning to Orlando, Florida, in 1969, she became an instructor of business administration at the University of Central Florida. Carol was appointed to the position of Dean of Women in 1971, and is currently serving as Associate Dean of Students at the University of Central Florida.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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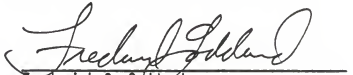

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I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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This dissertation was submitted to the Graduate Faculty of the Division of Curriculum and Instruction in the College of Education and to the Graduate Council, and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

Dean for Graduate Studies and Research